

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A concentrate adapted to be diluted with a diluent polymer to produce a corrosion inhibiting composition effective to protect a ferrous metal surface against corrosion in a molecular-oxygen containing atmosphere containing in the range from 1 to 100 ppm of an acid gas at a relative humidity of 90% and 37.4°C (100°F), when the ferrous metal surface is exposed in generally spaced apart relationship with the composition in a sealed environment, the concentrate comprising a substantially non-hydrolyzable synthetic resinous polymer that is biodegradable or non-biodegradable having dispersed therein from 10 to about 40 parts of an interceptor comprising an alkali metal silicate, or zinc oxide, or both, from 10 to 40 parts of sodium nitrite, and from 10 to 40 parts of a 2,4,6-tri substituted phenol ~~having a 4 substituent consisting of a substitutable methylene carbon or a substitutable amine~~, in combination with an adjuvant present in less than 5 parts, provided that the resinous polymer has a water vapor transmission rate (WVTR) at least as high as that of low density polyethylene, and is present in an amount of at least 40 parts in 100 parts of the composition concentrate.

2. (Currently Amended) The concentrate of claim 1, wherein said alkali metal silicate is sodium silicate, wherein said non-hydrolyzable synthetic resinous polymer is miscible in the diluent polymer comprising low density polyethylene, polypropylene, copolymer of lower C₂ –C₈ olefins, copolymer[[s]] of [[a]] lower C₂ –C₈ olefin and ethylene/vinyl alcohol, non-biodegradable polyester, polycarbonate, polyurethane, polybutene, poly(vinyl chloride), polystyrene, polyamide, or a biodegradable ~~polyester~~ polymer having a WVTR higher than about 1.5 gm/24 hr measured per 0.025 mm (1 mil) thickness and 645 cm² (100 in²) area at 37.4°C (100°F) and 90%RH[[]]] (relative humidity).

3 (Currently Amended) The concentrate of claim 2, wherein the diluent polymer is a biodegradable ~~polyester~~ polymer comprising star ϵ -caprolactone, ϵ -caprolactone (PCL); poly(hydroxybutyrate-co-valerate) (PHBV); uncoated-and nitrocellulose-coated cellophane films; crosslinked chitosan; starch/ethylene vinyl alcohol (St/VOH) blend films; pure ethylene vinyl alcohol film; or polycaprolactone (PCL), ~~molecular weight about 80,000 Daltons.~~

4. (Currently Amended) The concentrate of claim 2, wherein the 2,4,6-tri-substituted phenol comprises 2,6-di-t-butyl-4-methylphenol; 2,2'-methylene-bis(4-methyl-6-t-butylphenol); 1,1,3-tris(2'-methyl-4'-hydroxy-5'-t-butylphenyl)butane; 1,3,5-tri(3',5'-di-t-butyl-4'-hydroxybenzyl)-2,4,6-trimethylbenzene; tris((3-(3',5'-di-t-butyl-4'-hydroxybenzyl)-2'-acetoxyethyl))isocyanurate; or, pentaerythrityl-tetrakis(3,5-di-t-butyl-4-hydroxyphenylpropionate), or a combination thereof.

5. (Currently Amended) The concentrate of claim 4, wherein ~~the alkali metal silicate is a silicate of sodium, and~~ the adjuvant ~~[[is]]~~ comprises fumed silica or calcium carbonate.

6. (Previously Presented) The concentrate of claim 2, wherein the interceptor and the sodium nitrite have a primary particle size in the range from about 1 μm to 53 μm and are substantially homogeneously dispersed in the polymer.

7-15. (Cancelled)

16. (New) The concentrate of claim 1, wherein the particle size of said alkali metal silicate or said zinc oxide is from 1 to 45 microns, and wherein the particle size of said trisubstituted phenol is from 1,180 to 710 microns.

17. (New) The concentrate of claim 3, wherein the particle size of said alkali metal silicate or said zinc oxide is from 1 to 45 microns, and wherein the particle size of said trisubstituted phenol is from 1,180 to 710 microns.

18. (New) The concentrate of claim 5, wherein the particle size of said alkali metal silicate or said zinc oxide is from 1 to 45 microns, wherein the particle size of said trisubstituted phenol is from 1,180 to 710 microns, and wherein the particle size of said fumed silica or calcium carbonate is less than 1 micron.

19. (New) A composition, comprising the concentrate of claim 1, and said diluent polymer, said composition comprising:

from 0.01% to 2% by weight of said alkali metal silicate or said zinc oxide;

from 0.01 % to 2% by weight of said sodium nitrite;

from 0.01% to 2% by weight of said trisubstituted phenol; and

wherein said remainder of said composition is substantially said biodegradable or said non-biodegradable diluent polymer.

20. (New) A composition, comprising the concentrate of claim 2, and said diluent polymer, said composition comprising:

from 0.01% to 2% by weight of said alkali metal silicate or said zinc oxide;

from 0.01 % to 2% by weight of said sodium nitrite;

from 0.01% to 2% by weight of said trisubstituted phenol; and

wherein said remainder of said composition is substantially said biodegradable or said non-biodegradable diluent polymer.

21. (New) A composition, comprising the concentrate of claim 3, and said diluent polymer, said composition comprising

from 0.01% to 2% by weight of said alkali metal silicate or said zinc oxide;

from 0.01 % to 2% by weight of said sodium nitrite;

from 0.01% to 2% by weight of said trisubstituted phenol; and

wherein said remainder of said composition is substantially said biodegradable or said non-biodegradable diluent polymer.

22. (New) A composition, comprising the concentrate of claim 18, and said diluent polymer, said composition comprising

from 0.01% to 2% by weight of said alkali metal silicate or said zinc oxide;
from 0.01 % to 2% by weight of said sodium nitrite;
from 0.01% to 2% by weight of said trisubstituted phenol;
from about 0.01% to 5% by weight of said fumed silica or said calcium carbonate; and
wherein said remainder of said composition is substantially said biodegradable or said non-biodegradable diluent polymer.

23. (New) The concentrate of claim 1, wherein said diluent polymer is said biodegradable polymer.

24. (New) The concentrate of claim 23, wherein said biodegradable polymer is a star ϵ -caprolactone, ϵ -caprolactone (PCL); poly(hydroxybutyrate-co-valerate) (PHBV); uncoated- and nitrocellulose-coated cellophane film; crosslinked chitosan; starch/ethylene vinyl alcohol (St/VOH) blend film; pure ethylene vinyl alcohol film; or polycaprolactone (PCL), molecular weight about 80,000 Daltons.

25. (New) The concentrate of claim 24, wherein said alkali metal silicate is sodium silicate, wherein the 2,4,6-tri-substituted phenol comprises 2,6-di-t-butyl-4-methylphenol; 2,2'-methylene-bis(4-methyl-6-t-butylphenol); 1,1,3-tris(2'-methyl-4'-hydroxy-5'-t-butylphenyl)butane; 1,3,5-tri(3',5'-di-t-butyl-4'-hydroxybenzyl)-2,4,6-trimethylbenzene; tris((3-(3',5'-di-t-butyl-4'-hydroxybenzyl)-2'-acetoxyethyl))isocyanurate; or, pentaerythrityl-tetrakis(3,5-di-t-butyl-4-hydroxyphenylpropionate), or combinations thereof, and wherein the adjuvant comprises fumed silica and calcium carbonate.

26. (New) A corrosion inhibiting composition effective to protect a ferrous metal surface against corrosion in a molecular-oxygen containing atmosphere containing in the range from 1 to 100 ppm of an acid gas at a relative humidity of 90% and 37.4°C (100°F), when the ferrous metal surface is exposed in generally spaced apart relationship with the composition in a sealed environment, the composition comprising: a substantially non-hydrolyzable synthetic resinous polymer that is a biodegradable or non-biodegradable

polymer having dispersed therein from 0.01% to 2% by weight of an interceptor comprising an alkali meta silicate or zinc oxide, from 0.01% to 2% by weight of sodium nitrite, and from 0.01% to 2% by weight of a 2,4,6-trisubstituted phenol, and less than 5% by weight of an adjuvant, provided that the polymer has a water vapor transmission rate (WVTR) at least as high as that of low density polyethylene, and wherein said biodegradable polymer or said non-biodegradable polymer constitutes substantially the remainder by weight of said corrosion inhibiting composition.

27. (New) The corrosion inhibiting composition of claim 26, wherein said alkali metal silicate is sodium silicate, wherein said biodegradable polymer comprises a star ϵ -caprolactone, ϵ -caprolactone (PCL); poly(hydroxybutyrate-co-valerate) (PHBV); uncoated- and nitrocellulose-coated cellophane films; crosslinked chitosan; starch/ethylene vinyl alcohol (St/VOH) blend film; pure ethylene vinyl alcohol film; and polycaprolactone (PCL), and wherein said non-biodegradable polymer comprises low density polyethylene, polypropylene, copolymer of lower C_2 – C_8 olefins, copolymer of lower C_2 – C_8 olefin and ethylene/vinyl alcohol, polycarbonate, polyurethane, polybutene, poly(vinyl chloride), polystyrene, polyamide, and the biodegradable polymer having a WVTR higher than about 1.5 gm/24 hr measured per 0.025 mm (mil) thickness and 645 cm² (100 in²) area at 37.4°C (100°F) and 90%RH)relative humidity).

28. (New) The corrosion inhibiting composition of claim 27, wherein said biodegradable polymer is a star ϵ -caprolactone, ϵ -caprolactone (PCL), or poly-caprolactone, and wherein said non-biodegradable polymer is low density polyethylene, or ethylene/vinyl acetate copolymer.

29. (New) The corrosion inhibiting composition of claim 27, wherein the adjuvant comprises fumed silica or calcium carbonate.

30. (New) The corrosion inhibiting composition of claim 26, wherein the amount of said alkali metal silicate is from 0.01% to 1% by weight, wherein the amount of said sodium nitrite is from 0.05% to 1% by weight, wherein the amount of said adjuvant is from 0.01% to

1% by weight, and wherein the amount of said trisubstituted phenol is from 0.05% to 1% by weight.

31. (New) The corrosion inhibiting composition of claim 29, wherein the amount of said alkali metal silicate is from 0.01% to 1% by weight, wherein the amount of said sodium nitrite is from 0.05% to 1% by weight, wherein the amount of said adjuvant is from 0.01% to 1% by weight, and wherein the amount of said trisubstituted phenol is from 0.05% to 1% by weight.

32. (New) The corrosion inhibiting composition of claim 26, wherein said polymer is said biodegradable polymer.

33. (New) The corrosion inhibiting composition of claim 26, wherein said polymer is said non-biodegradable polymer.

34. (New) The corrosion inhibiting composition of claim 29, wherein said polymer is said biodegradable polymer.

35. (New) The corrosion inhibiting composition of claim 29, wherein said polymer is said non-biodegradable polymer.

36. (New) The corrosion inhibiting composition of claim 31, wherein said polymer is said biodegradable polymer.

37. (New) The corrosion inhibiting composition of claim 31, wherein said polymer is said non-biodegradable polymer.